

## Summary of Results of Charbert Hydrogen Sulfide Monitoring August 10 - 30, 2004

The Rhode Island Department of Environmental Management (RI DEM) is currently operating continuous hydrogen sulfide monitors in Alton, Rhode Island, north of the lagoons at the Charbert facility. The monitors operated from June 7, 2004 to August 12, 2004 at 16 River Street, Alton. On August 12, 2004 they were moved, in response to the request of residents, to a nearby location at 7 Myrtle Street, Alton

Charbert began the operation of aerators in its active lagoon, Lagoon 1, on July 27, 2004 in an attempt to reduce anaerobic degradation and thus reduce the formation of hydrogen sulfide. The hydrogen sulfide monitors operated for 46 days in June and July before the aerators began operation. During that period, maximum hydrogen sulfide levels were above 10 ppb during 38 days (83%) and above 30 ppb on 28 days (61%). Concentrations at or exceeding 90 ppb were observed on four days during that period.

During the period August 10 – 30, 2004, no hydrogen sulfide levels above 10 ppb were observed. The highest level measured during that period was 5 ppb at 10:00 PM on Friday, August 13<sup>th</sup>. These levels are consistent with background concentrations. Concentrations were similar at the Myrtle Street location to those observed at the River Street site after the aerators began operating.

Consistent with these measurements, residents have reported that the hydrogen sulfide odor in the neighborhood has been greatly reduced since the aerators began operating. However, neighbors have reported a burning oil odor in the neighborhood in recent weeks. As reported previously, RI DEM collected an evacuated canister air sample on River Street on July 30, 2004 at a time when an odor was present in the neighborhood. Although concentrations of the target volatile organic compounds (VOCs) measured by this sampling method were not elevated above background levels, the laboratory detected the presence of three aldehyde compounds in that sample that are not frequently seen in VOC samples taken in Rhode Island.

Since the canister sampling method cannot accurately quantify aldehyde concentrations, RI DEM collected a 24-hour air sample on Myrtle Street using the recommended method for sampling for aldehydes on Saturday, August 28<sup>th</sup>. This sample will be analyzed for a full range of aldehydes, including the three tentatively identified in the July 30<sup>th</sup> VOC sample. In addition, since residents report that odors typically are worst in the evening and nighttime hours when DEM personnel are not available, a neighbor has been supplied with an evacuated canister and will collect an additional VOC sample when the odor is present.

Hydrogen sulfide concentrations measured to date at Myrtle Street and River Street and at a previous monitoring location on Woodville-Alton Road are displayed in Table I below.

Table I Maximum Hydrogen Sulfide Levels

Monitor	Date	Maximum 15-minute Reading	Maximum 1-hour Level  Nuisance Air Quality >2 - <100 ppb  Moderate Air Quality 100 - <1000 ppb	Maximum 24-hour Level  Nuisance Air Quality >2 - < 30 ppb  Moderate Air Quality 30 - <70 ppb
Myrtle Street	8/12 – 8/30/04	5 ppb	3 ppb	0.6 ppb
River Street	6/7– 6/14/04	78 ppb	49 ppb	7 ppb
	6/15 – 6/21/04	44 ppb	29 ppb	7 ppb
	6/21 – 6/28/04	90 ppb*	79 ppb*	15 ppb
	6/28 – 7/7/04	90 ppb*	78 ppb*	16 ppb
	7/7 – 7/12/04	45 ppb	33 ppb	7 ppb
	7/16 – 7/26/04	90 ppb*	86 ppb*	16 ppb
	7/27**– 8/3/04	29 ppb	23 ppb	3 ppb
	8/3 – 8/9/04	9 ppb	5 ppb	0.4 ppb
	8/10 – 8/12/04	2 ppb	2 ppb	0.5 ppb
Woodville-Alton Rd	5/13 – 6/7/04	6 ppb	2 ppb	0.2 ppb
	6/6 – 6/14/04	27 ppb	19 ppb	3 ppb
	6/15 – 6/21/04	10 ppb	5 ppb	1 ppb
	6/22 – 6/28/04	16 ppb	13 ppb	2 ppb
	6/28 – 7/7/04	39 ppb	28 ppb	2 ppb
	7/7 – 7/15/04	12 ppb	7 ppb	1 ppb

\*Due to the limitations of the instrumentation, concentrations during these periods may have been higher than these values.

\*\*Aerator began operation on 7/27/04.

Hydrogen sulfide monitoring is continuing at the Myrtle Street location. For more information about sampling results, contact Barbara Morin at 222-4700, ext. 7012.